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ABSTRACT

Nine prevalent ideas about reading in the content areas are analyzed in this paper. The ideas are as follows: (1) students can not read textbooks because elementary teachers did not teach them to read; (2) students can not read textbooks because of poor phonics and word recognition skills; (3) "real learning" results from reading, rather than from aural/oral or firsthand experiences; (4) since textbooks contain essential information, they should be read orally to students who can not read them; (5) good readers read texts rapidly, comprehending and remembering all the material presented; (6) students' comprehension skills can be improved by completing reading comprehension exercises; (7) to read textbook chapters and answer subsequent questions is an effective learning method; (8) the use of such aids as guiding questions and study guides alleviates most content reading problems; and (9) student interest in a unit of study is desirable but not essential for successful learning. It is concluded that many of the ideas are erroneous, while others represent commonsense practices that could be used if they were altered in light of the dynamic interplay between thought and language. (GW)

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THOUGHT, LANGUAGE AND READING IN THE CONTENT AREAS

Much has been written about reading methodology in the content areas.* Very little has been published, however, which analyzes and evaluates the assumptions underlying such instruction. These practices seem to have emerged in an attempt to resolve immediate reading-learning problems on a superficial level without questioning their underlying assumptions. Without an adequate theory to test such assumptions, instruction will continue to be guided by traditional thoughts and practices.

Where does one look for such a theory? In the past decade, considerable theoretical work has taken place in psycholinguistics. This area of study attempts to account for the processing of thought into language and back again. That is, how do speakers and writers process their thoughts into sound and print? And conversely, how do listeners and readers decode symbolic sounds and print back into thought? More specifically, reading is viewed by psycholinguists as a predictive-communicative process, whereby the reader and author communicate vicariously making use of their common

*The phrase, reading in the content areas, is used to differentiate basic reading instruction from subject matter reading. Basic reading instruction emphasizes the process of learning to read material which is already understood aurally, while subject matter reading emphasizes the learning of content material which is less familiar to the reader. Obviously, all text has content.

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experiences, thoughts, language abilities and also their knowledge of the visual features of written language.*

Contrary to popular opinion, reading appears to be mostly a nonvisual process (Kolers, 1969). Palmer (1975) also points out the importance of the nonvisual aspects of reading when he states:

> Nonvisual information transcends the text or printed materials being studied. It involves the student's ability to conceptualize his previous experiences, particularly in relation to the topics of the material at hand. Second, nonvisual information involves the student's prior knowledge of language and familiarity with the structures and patterns within forms of written discourse.

The visual aspects of reading, however, have traditionally been overemphasized not fully appreciating the complexity and the prodigious nature of human language competencies which bridge meaning and symbolic print.

Therefore, the purpose of this paper is to apply selected understandings of thought and language processing** to the analysis of nine commonly accepted ideas related to reading in the content areas.*** Too often, decisions concerning the reading of content materials have been made without referring back to the dynamic language and thought processes which underlie reader-author communication.

*This is the definition of reading used throughout this paper.

**The relationships between thought and language per se are not discussed because of the comprehensive nature of such a topic. Specific psycholinguistic concepts are applied as appropriate in order to evaluate the particular reading/teaching ideas presented.

***These nine ideas were synthesized according to the writer's knowledge of traditional content teaching. Some are based on the implications of such teaching rather than teachers' explicit verbalization of such notions.

An Analysis of Nine Prevalent Ideas

The following discussion then is an analysis of nine prevalent ideas and their underlying assumptions. These particular ideas were selected because of their prominence and influence on reading practices in content classes.

1. Students can't read their textbooks because elementary teachers didn't teach them to read.

This statement fails to consider the role past experiences and understandings play in the reading process. Such a view fallaciously implies that meaning is found in the ink, not recognizing the symbolic nature of print. Symbols only carry meaning for readers who share certain common experiences and understandings with an author.

Elementary school children are taught to read those ideas which they already understand aurally. The content of materials used in elementary reading instruction is largely based on children's everyday activities, interests and knowledge. Such content differs from that presented in social studies, science and math classes, where readers must have a much more sophisticated and specialized knowledge of their social and physical world. Terms such as "photosynthesis" and "embargo" represent concepts beyond the conceptual base and experience of many students, making such a vicarious reading experience untenable. Subject matter teachers' major responsibility is to provide students with many first-hand experiences similar to those referred to in the text. Then students are better prepared to read about them. Before students can read about particular concepts, they must be able to think and language about them (Goodman, 1973b).

Most children are taught to read in the elementary school. But learning to decode* print which represents everyday experiences does not help students read about ideas which are beyond their understandings and experiences.

2. Students can't read in the content areas because of inadequate phonics skills and word recognition abilities.

The basic assumption underlying this statement is the same as in item 1. That is, reading is simply "sounding-out" or recognizing words. If the visual symbols can be transposed into oral language, the reader can then comprehend the thoughts of the author. The fact is, however, that many older students can pronounce most of the words in their textbooks (Herber, 1970). Their problem is not one of processing print into sound but rather deriving meaning from terms and language patterns which represent experiences they have not had (Goodman, 1973b). Instead of decoding the text they recode it (Goodman, 1971). They transform the written code into an oral code without comprehending the thoughts of the writer.

The importance of word recognition and sound-symbol relationships is not being questioned. The pronunciation of words, however, is not the major problem in content reading; it is rather a thinking-language problem. The obvious solution to such a dilemma is for teachers to involve students in numerous aural-oral and first-hand experiences. Thus, stimulating much thought and language before expecting them to link such ideas to print. For example, if students are studying the water cycle, they should be given

*Decoding throughout this paper refers to the process of moving directly from the graphic code to meaning, not the traditional "sound-it-out" definition.

the opportunity to conduct experiments related to evaporation, condensation and other weather related phenomena before being expected to read about such ideas.

Students' thinking and experiential base must be extended if reading abilities in the content areas are to improve. This in turn increases the complexity and sophistication of their language which more closely approximates the author's thoughts and language. Increased thinking and language abilities related to specific topics enable students to read about those topics with greater facility. Simply believing that inadequate phonics and word recognition abilities account for ineffective content reading will not.

3. "Real learning" is a result of reading. Aural-oral or firsthand experiences are inferior modes of learning. Students must learn by reading and not be patronized with nonreading activities.

This statement fails to recognize the importance and primacy of oral language. All students must extend their understanding of unfamiliar topics aurally-orally and through concrete experiences before they are able to read about such ideas. If this is true for all students, certainly poor readers should not be penalized and handicapped further by not being allowed to learn aurally-orally. This is probably their most effective mode for learning. Improved cognition, after all is the goal of education - not reading; therefore, inadequate reading abilities should not be used as an excuse for not allowing students to learn.

Firsthand and aural-oral learning experiences are not inferior modes of learning. Not only are such experiences a primary means for learning, they are also prerequisite to reading. Dynamic aural-oral experiences do not patronize students in a negative sense but constitute both effective

content instruction and pre-reading activities. As suggested in items 1 and 2, reading problems in the content areas stem mainly from inadequately developed thought and language patterns. Such a situation, as noted previously is remedied by increased aural-oral instruction, not less. "Real learning" results from interacting linguistically with the thoughts of others whether it be firsthand or through a vicarious reading experience.

4. Textbooks contain a great deal of knowledge which students need to learn if they are to live the "good life." Therefore, students who can't read the text need to have it read to them orally.

If subject matter teachers would analyze the content of their texts critically and carefully, most would be surprised not only with the relatively few topics discussed but also with the superficiality of their treatment. Obviously, no general text can provide a comprehensive examination of any topic or discipline. Most do not even provide adequate data for resolving students' questions which are usually diverse and very specific. If the "good life" results from an accumulation of knowledge, those seeking it necessarily must not be limited to texts or to any one type of written material. This is true whether a student reads a text independently or has it read to him.

Furthermore, reading textbooks orally to students who can't read triggers less meaning than one would predict. Many times, reading problems are not related to processing print but to the reader's inability to think or process the thoughts expressed (Moffett, 1968). Merely changing the written code into an oral code does not automatically assure comprehension. When textbooks are considered sacrosanct and used indiscriminately with all students, comprehension problems will occur. Many students possess neither the interest nor the understandings required to read such materials.

Theoretically, all students have a reading problem when they are required to read about ideas they don't understand or want to learn. Therefore, individual students need to identify unit-related topics of particular interest for personal research (Postman + Weingartner, 1969). In this way each student successfully gains an in-depth knowledge of a few topics as well as a general understanding of many from listening to their peers report their research findings.

Efficient learning and reading depend on the degree of match between students' perceptions/interests and the substance of the text. Learning must start with the learner's perceptions and problems (Postman + Weingartner, 1969). If reading is not motivated by personally significant questions, even the most simply written books can be difficult to read. On the other hand, very complex text oftentimes carries much meaning for the reader who really wants to know (Holt, 1969). Both effective learning and reading demand that students become actively involved trying to make sense of their life experience (Smith, 1975). Such interest-oriented study does not function most efficaciously within the confines of a single text. Exposure to a wide variety of materials on different reading and interest levels provides optimum learning and reading for students on all achievement levels. Finding enough print and nonprint materials to satisfy students' various interests and abilities is both the problem and the solution. The use of a single text rendered orally for "poor readers", however creates a problem which severely limits learning and reading.

5. Good readers read texts rapidly, completely comprehending and remembering all the concepts and facts presented.

Again, a simplistic definition of reading is assumed. Reading is viewed as a visual-mechanistic process of changing graphic signs into sound.

This "sound-it-out" phenomenon seems to imply that if one can pronounce all the words in the text, immediate understanding emerges (Smith, 1973). It is doubtful that many teachers would consciously defend that position, but it appears that much teaching behavior is based on such a premise.

This point of view fails to consider the linguistic-communicative nature of the reading process. It views readers as deriving meaning from the print rather than taking meaning to it. Readers interpret the author's message in light of their immediate interests, questions, concerns and understandings. They take their individual perceptions and world view with them to the text and interpret it accordingly. Readers comprehend and remember those ideas which are directly related to what they want to know and fail to attend to others (Smith, 1975). The great variety of interpretations of a given text is baffling if the personal dynamics and linguistic complexity of the communicative-predictive nature of reading are not understood.

Contrary to popular belief, good readers do not learn and remember everything they read, but nonconsciously process meaningful ideas which support their point of view and fail to process those which do not deal with their real questions and concerns (Smith, 1975). Readers do not indiscriminately store information like a computer - spewing it forth when required. This type of behavior can be precipitated, though, by testing which emphasizes unimportant details and teaching which stresses the trivial. However, if students are not conditioned to look for "every detail," they will probably read very selectively, processing and remembering only those ideas which help them "make sense of things."

6. Students' abilities to comprehend content materials can be improved by completing reading exercises which emphasize comprehension skills.

Once again, it is assumed that reading is a mechanical process, whereby the reader derives meaning directly from the print if enough reading skills have been mastered. Comprehension skills are usually described with terms such as main ideas, details, drawing inferences and summarizing. These exercises often fail, however, to consider the role that content plays in the reading act. If students happen to be familiar with a topic, they will probably comprehend well; but, when the selection deals with less familiar ideas they will not be so successful. Furthermore, if readers are interested and familiar with the ideas presented, the thinking inferred by the numerous comprehension skill terms listed above will probably characterize their thoughts intrinsically. Such skill problems probably have more to do with thought than reading. Many problems in content instruction are not so much reading problems as they are learning problems (Harber, 1970).

Traditionally, reading teachers have thought of reading in terms of skills and have subsequently dichotomized reading instruction into the so-called "decoding" and comprehension skills. A common complaint is, "My students have no problem 'decoding' but they can't comprehend." This traditional definition of decoding refers to "sounding-out" graphic symbols rather than ascertaining the meaning they represent. If reading is viewed as a communicative-language process, such a separation is incompatible; it must function as a whole. If any one of the three language systems (graphophonic, syntactic and semantic) is viewed as a separate entity, functioning irrespective of the other two, the linguistic nature of reading ceases to exist (Goodman, 1973a).

Comprehension is a wholistic term which indicates that a communication has been received and understood. Hence, when comprehension is analyzed

in the context of written language, it appears to be synonymous with the term reading itself. That is, both terms refer generally to the successful interpretation of an author's thoughts. However, if one desires to analyze the meaning aspects of reading discretely, as the traditional use of comprehension implies, the grammatical structures and semantics of language should be studied. These two language systems form the linguistic framework and content of language which gives symbolic print meaning. They enable an author's thoughts to be shared and understood. Smith (1971) claims that grammar is the bridge between thought (semantics) and the physical aspects of language - sound and print. Thus, it would appear that comprehension skill exercises are based on premises which are not psycholinguistically sound and probably affect reading abilities in the content areas less than is popularly believed.

7. Reading a chapter from a textbook and answering subsequent questions is a very effective way of learning.

This common classroom practice again assumes the thoughts of the author to be found within the print itself. If students "read" (recognize and pronounce words) their assignment as requested, the author's ideas will become evident. However, when students are not successful, it is often concluded that the reader has a "reading" problem. Once more, if a problem exists it is probably related to the reader's lack of experience with the ideas in the text. Where this is the case, no amount of reading or questioning of this type will make such experiences and/or ideas become a part of the student's world.

It is not being suggested that one cannot learn by reading. Readers do have difficulty comprehending, however, when they are uninterested and/or the reader's ability to conceptualize is on a significantly lower level than the

ideas represented in the text (Smith, 1975). Thus, the reader is overwhelmed and discouraged. Conversely, if the reader is highly motivated and the gap between the sophistication of the text and the reader's experiential-conceptual base is not too great, reading functions as a vicarious means for extending students' concrete experiences and aural understandings. This seems to suggest that teachers need to help students "zero-in" on unit-related topics of intrinsic interest and subsequently identify appropriate reading materials. For example, during a unit on Japan, a student might be interested in comparing the clothing of Japanese citizens during World War II and their present style of dress. In such an undertaking, the student needs his/her teacher's help in locating a wide variety of reading materials related to that topic.

Such an approach, though, seems to suggest major changes in teaching procedures rather than simply making use of a new reading-teaching technique. Such a change would require a great deal of thought and effort as well as trust between students and teachers. The typical "read and answer the question" lesson is usually much easier and more comfortable for both the student and instructor. Most students have nonconsciously internalized patterns of written language which enables them to answer questions using their linguistic knowledge with very little thought transpiring. For example, to complete the item, "Name eight imports of Holland," many students intuitively look in the text for a list of eight terms which is preceded or followed by the word import. Not understanding this, a teacher might be under the illusion that such behavior reflects children's understanding of the role such products and/or materials play in Holland's economy as well as the underlying principles of trade.

Contrary to some of the assumptions underlying the traditional textbook approach, it would appear that the perceptions of students are altered most effectively when highly enthusiastic and knowledgeable teachers stimulate students to "want-to-know" about unit-related ideas which they have found personally significant. Following this initial motivation, students need to become dynamically involved interacting aurally-orally with their peers, family and others about ideas highly relevant to their personal interests and needs. Such firsthand encounters can then be extended vicariously by encouraging children to read and write. This dynamic languaging and learning, however, is not likely to occur using a single text and the "read and answer the question" format.

8. The use of guiding questions, study guides, organizational strategies and vocabulary lessons significantly alleviates most reading problems in the content areas.

These reader-helps can be beneficial, especially when students are involved with prescribed materials and assignments. It should be recognized, however, that successful reading has more to do with readers' and authors' common experiences, language patterns and interests than it does with reading guides and the organizational format of a text. Similarly, students' abilities to answer arbitrary vocabulary questions and to produce dictionary-like definitions for "new" words of a unit do not automatically provide students with the functional understandings and ideas those words represent.

Furthermore, the textbook orientation of such methods seems to imply that a single text be used with whole classes of students. Such a practice ignores the need for differentiated reading levels and also assumes that students' questions and interests are general in nature and similar to the author's. But, because of students' diverse and specific interests, it is

doubtful that the survey nature of textbook information will provide the variety and specificity of information required by individual students' particular questions. Varying interests and backgrounds call for the use of more extensive resources, both print and nonprint materials.

Learning should start with student questions, not with the limitations of textbooks. When students are required to read textbooks page by page and cover to cover, it is not likely that the methodological procedures referred to can neutralize the negative effects of standardized lessons. Guiding questions, organizational helps and vocabulary study should not be discounted, but used as needed with individual students as they research their own specific questions in self-selected materials. This would optimize the use of such study skills as well as capitalize on the intrinsic motivation of questions which bridge particular students' inner thoughts with their outside worlds. Isn't such cognitive-linguistic activity the essence of being human?

9. Student interest in a unit of study is desirable but not really essential for successful learning-reading.

Much has been written about motivation and teaching according to students' interests. Yet, most of the content teaching observed by the researcher has failed to utilize student-centered learning sufficiently and contrarily has supported the "mind-filling" theory. Such teaching is viewed as filling students' minds with information deemed important by adults. Information is then packaged in "teacher-proof" textbooks and workbooks to ensure that students learn "what they're supposed to." Student interest is not considered seriously nor viewed as essential for successful learning.

On the other hand, student-centered instruction seems to be viewed as unrealistic and permissive. Opponents of such instruction appear to have a basic distrust and/or lack of knowledge of children as active learners. They also seem to be concerned that the accumulated knowledge of the past will not be learned. Hence, students are conditioned not to ask personally relevant questions but "satisfactorily" answer questions posed by a teacher or the authors of their texts. Unfortunately, the difference between teaching and learning is not always recognized. Such passive-rote learning does not alter children's perceptions nor does it enable children to "learn" information accumulated by preceding generations. Theoretically, it would appear that students learn best when they have an intrinsic purpose for learning (Smith, 1975).

Instruction based on the perceptions and interests of students is not permissive but imperative both theoretically and pragmatically (Smith, 1975). Perceptions are the base upon which thoughts are extended and/or improved, while interests provide purpose for learning. This also holds true for reading. As indicated previously, improved reading in the content areas is more often dependent upon students' particular perceptions and interests than on the mechanical-visual aspects of reading. Uninteresting learning situations or insipid reading materials not only influence students affectively but also their abilities to think and language about a given topic. Students are usually interested in ideas with which they are somewhat knowledgeable. Such knowledge, in turn provides the language patterns necessary for successful reading.

Summary Statements and Conclusions

The following summary statements were synthesized from the foregoing analysis. These are ideas which teachers might contemplate as they endeavor

to improve students' learning and reading in the content areas.

Beginning reading instruction enables children to read ideas they already understand aurally, while content material often refers to ideas beyond students' present experiences and understandings. Therefore, students must experience, think and language about new ideas aurally-orally, before being expected to read about them. First-hand and aural-oral learning should be emphasized with both readers and nonreaders alike.

Word recognition and sound-symbol relationships are necessary for successful reading but do not negate students' need for the cognitive understandings and language patterns inherent in an author's communication.

Exercises dealing with general comprehension skills will not alleviate difficulties stemming from the reader's lack of specific understandings and language patterns.

Decoding and comprehension are synonymous terms and should not be considered as separate aspects of reading. Both refer generally to deriving meaning. The traditional concept of "decoding" (correctly pronouncing words "out-loud") is an erroneous one as it does not assure meaning.

Teaching techniques used in content-reading instruction do not obviate the need for reader interest and familiarity with the concepts and language patterns of the text.

All truth is not found in textbooks. Students should be encouraged to use many different types of print and nonprint materials on various reading and interest levels. Such diversity is imperative if individual students are to answer their personally significant questions and concerns.

Readers perceive and remember ideas which are of personal relevance. Therefore, student interest is not only desirable but essential.

Theoretically, it would appear that reading instruction in the content areas would greatly improve if teachers were to evaluate the assumptions underlying their teaching practices according to the relationships which exist between thought and language. Many of the ideas evaluated in this discussion, such as the notion that meaning is "in the print," are erroneous and need to be changed. Others, however, represent common-sense practices which could be used if they were altered in light of the dynamic interplay between thought and language. For example, instead of trying to improve students' comprehension abilities through the use of commercial skill exercises, encourage them to read unit-related materials of personal

interest. Then, by having students discuss the particular types of information and concepts contained within their reading, the thinking inherent in the various "comprehension skills" will probably follow as a natural consequence.

Traditional reading practices need not be completely abandoned. But, on the other hand, they should not be used to shortcut theoretically sound teaching for the convenience of teachers or students. So-called "practical" ideas often inhibit successful reading because they fail to recognize or capitalize on students' incomparable cognitive and language abilities which make reading possible.

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